ward in the near sight section with increasing distance from the upper margin of the progression zone, these high surface astigmatism values would be considerably smaller.

In the design according to FIGS. 1 and 3, lines of equal average surface refraction value are the same as in FIGS. 1–2 but the increase is different from the far sight region to the near sight region. In the upper and lower sections, the surface astigmatism practically disappears; only the surface astigmatism below the central region increases to values up to 3.

The surface refraction value along the main meridian, which is shown in FIG. 4 (with reference to FIG. 1 too), corresponds to the design according to FIGS. 1–2.

The surface refraction value along the main meridian, which is shown in FIG. 5, corresponds to the design according to FIGS. 1, 3.

In the design according to FIG. 4, the maximum K value for change in curvature is 1.8 diopters (0.6×3 diopters) and in FIG. 5, 1.5 diopters (0.5×3 diopters).

The preferred embodiment examples explained above give possible, yet not optimal solutions for all cases. However, optimal solutions in any particular case according to the principle which forms the basis of the invention can be determined by those skilled in the art without any fundamental difficulties:

(a) One determines the surface refraction values along the main meridian and lines of equal average surface refraction value from the main meridian to the periphery of the eyeglass lens.

(b) Thus, lines of equal average surface astigmatism can be calculated and checked to see whether they conform to desires.

(c) But one will always find that lines with equal average surface astigmatism are more favorable and the surface astigmatism is lower than it is when lines of equal average surface refraction value are determined, which begin at the periphery of the eyeglass lens and also end there, as presently is the case in all known progressive eyeglass lenses due to their different viewpoint of adequate construction.

It is evident that those skilled in the art, once given the benefit of the foregoing disclosure, may now make numerous other uses and modifications of, and departures from the specific embodiments described herein without departing from the inventive concepts. Consequently, the invention is to be construed as embracing each and every novel feature and novel combination of features present in, or possessed by, the apparatus and techniques herein disclosed and limited solely by the scope and spirit of the appended claims.

What is claimed is:

1. In an Ophthalmic lens with a surface which has a far-sight field with surface refraction values corresponding to far sight in its upper region, a near-sight field which has surface refraction values corresponding to near sight in its lower section, is divided into left and right sections by a main meridian, the points of which are least approximate umbilical points wherein a progression zone is provided between the upper region continuously changing into the surface refraction values of the lower section, with lines of equal average surface refraction value intersecting the main meridian in the upper and lower sections being extended on both ends to the periphery of the ophthalmic lens, the improvement wherein at least one portion of the points of the main meridian have a finite difference between the two main curvatures which amounts to more than $0.01/(n-1)100$ and less than $0.25/(n-1)100\ cm^{-1}$ where n is index of refraction.

2. Ophthalmic lens according to claim 1 wherein the change in curvature along the main meridian has its maximum value near the center of the progression zone, at a position of substantially at the location corresponding to $0.5 \times$ the value of the incremental diopters from far to near field.

3. Ophthalmic lens according to claim 2 wherein the change in curvature in the progression zone proceeds substantially symmetrically on both sides of its maximum value.

4. Ophthalmic lens according to claim 1 wherein the change in curvature along the main meridian has its maximum value in a range defined substantially between $0.5 \times$ and $0.8 \times$ the value of the incremental diopters from far to near field, near the lower edge of the progression zone.

5. Ophthalmic lens according to claim 1 wherein the lines of equal average surface refraction value in the progression zone run substantially horizontally.

6. Ophthalmic lens according to claim 1 wherein lines of the same average surface refraction value in at least one of the near and far field regions run substantially horizontally.

7. Ophthalmic lens according to claim 1 wherein lines of equal average surface refraction value are curved progressively downward with increasing distance from the progression zone.

8. Ophthalmic lens according to claim 1 wherein the main meridian extends at an angle within $\pm 10°$ to the vertical including 0.

9. Ophthalmic lens according to claim 1 wherein the change in curvature along the main meridian has its maximum value in the range defined essentially between $0.5\text{–}1.0 \times$ incremental diopters from far to near field.

10. Ophthalmic lens with a surface which has a far sight field with a substantially constant surface refraction value corresponding to far sight in its upper region, a near sight field which has a substantially constant surface refraction value corresponding to near sight in its lower section, is divided into left and right sections by a main meridian, the points of which are at least approximate umbilical points wherein a progression zone is provided between the upper and the lower region, in which progression zone the surface refraction values of the upper region continuously change into the surface refraction values of the lower section, all the lines of equal average surface refraction value on the one hand intersecting the main meridian in the upper and lower sections and on the other hand extending by both ends to the periphery of the ophthalmic lens, the improvement wherein,

all the lines of equal average surface refraction value in the progression zone on the one hand intersect the main meridian and on the other hand extend by both ends to the periphery of the ophthalmic lens and wherein,

at least one portion of the points of the main meridian have a finite difference between the two main curvatures which amounts to more than $0.01/(n-1)100\ cm^{-1}$ and less than $0.25/(n-1)\ 100\ cm^{-1}$, where n is index of refraction of the lens material.

11. Ophthalmic lens with a surface which has a far sight field with a substantially constant surface refraction value corresponding to far sight in its upper region, a near sight field which has a substantially constant surface refraction value corresponding to near sight in